

## ABSTRACT OF THE DISCLOSURE

A system for locating parallel arcing faults in a set of wires is described. The system includes three devices that can be used in combination or alone. A first device applies a current to a wire while grounding the remaining wires of the set of wires so as to cause the parallel arc, the first device being adapted to locate the parallel arcing fault using one or more leading edges of one or more electromagnetic waveforms being conducted on the wire under test. A second device comprises a controller and two or more receivers, each receiver being electrically coupled to the controller for receiving one or more leading edges of one or more electromagnetic waveforms being radiated by the parallel arcing fault. A third device senses one or more leading edges of one or more electromagnetic waveforms as well as the ultrasonic emissions emitted from the parallel arcing fault.